



557 627

(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/105004 A1

(51) International Patent Classification⁷: **G11B 7/125, H01S 5/0683**

(21) International Application Number:
PCT/TB2004/050676

(22) International Filing Date: **13 May 2004 (13.05.2004)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
03101426.9 20 May 2003 (20.05.2003) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];**
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCHREURS, Gerard, E., N.;** Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **MCCORMACK, James, J., A. [IE/NL];** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN RENS, Antonia, C. [NL/NL];** c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: **UITTENBOGAARD, Frank;** Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

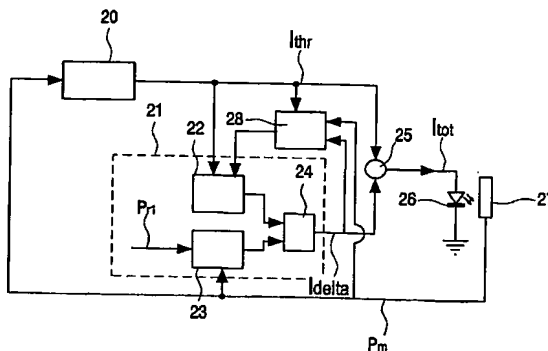
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,

[Continued on next page]

(54) Title: **METHOD AND RADIATION SOURCE DRIVING DEVICE FOR CONTROLLING RADIATION POWER**



(57) Abstract: The invention pertains to a method for controlling radiation power of a radiation source (26), comprising the steps of a) driving the radiation source (26) in a first mode comprising the substeps of a1) determining a threshold current (I_{thr}) at which the radiation source (26) begins to radiate, a2) measuring the radiation power emitted by the radiation source (26) with the threshold current (I_{thr}) increased with the a delta current (I_{delta}) for obtaining a predetermined radiation power P_r , wherein the delta current (I_{delta}) is calculated by subtracting the measured radiation power (P_m) from the predetermined radiation power P_r , b) driving the radiation source (26) in a second mode comprising the substeps of b1) determining the threshold current (I_{thr}), and b2) driving the radiation source (26) with the threshold current (I_{thr}) increased with the delta current (I_{delta}) for obtaining the predetermined radiation power P_r , wherein the delta current (I_{delta}) is calculated from the threshold current (I_{thr}) by using a function F which is a model for the relation between the threshold current (I_{thr}) and the delta current (I_{delta}) and the radiation power. The relation between the delta current (I_{delta}) and the threshold current (I_{thr}) however changes during the lifetime of the radiation source. Therefore the method according to the invention further comprises the step of c) calibrating the function F , comprising the substeps of c1) determining the radiation power and the delta current (I_{delta}) at at least two different threshold currents (I_{thr}) when the radiation source (26) is driven in the first mode, and c2) updating at least one parameter of the function F by using the measurements in substep c1.

WO 2004/105004 A1



CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.